SDSS Controls Overview

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Project Goals

- Provide a controls system that meets the project needs as described in the “Requirements Document”
- Provide a user interface for engineering and photometric/astrometric control of the telescope.
- Provide performance monitoring & a safety system for the telescope.

System Acronyms

- TCC - Telescope Control Computer
- MCP - Motion Control Processor
- TPM - Telescope Performance Monitor
- MEI - Motion Engineering Industries - VME motion processor
- PLC - Programmable Logic Controller

Technology

- TCC - VAX (VMS)
- MCP - VME, Motorola MVME-162-532
- Safety System - Allen Bradley PLC5/05
- Windscreen - Allen Bradley PLC5/04
- TPM - VME, Motorola MVME-162-512

Team

- TCC - Russell Owen, U of Washington
- MCP - Charlie Briegel, Fermilab
- Safety System - John Anderson, Fermilab
- TPM - Rich Neswold, Fermilab

Subsystems

- Motion Control
  - Charlie Briegel
  - Paul Czarapata
  - Bob Nagel
  - Peter Prieto
  - Claudio Rivetta

Subsystems Continued

- Interlocks
  - John Anderson
  - Glenn Federwitz
  - Paul Czarapata
- Electronic Support
  - Carlos Gonzales
  - Angela Prosapio

Subsystems Still Continued

- Counterweights
  - Sharon Lackey
  - Mark Averett
- Fiducials
  - Bill Boroski
  - Angela Prosapio

Operations Support

- Engineering and Operations Displays
  - Robert Lupton
  - Peregrine McGehee

Issues for Systems

- Windbaffle
  - Oscillation at soft limits
  - Maximum speed
  - Noise on LVDT's (Linear Voltage Displacement Transducers)
  - Reliability of Sumitomo Drives

More Issues

- Interlocks
  - Operator Training
  - Interlock Display
  - Building Changes

More Issues 2

- Motion Control
  - System Robustness
  - Intersystem Communications
  - Unimplemented Commands
  - CHANGE Balance, Resonance, etc.
  - LOSS OF KEY ENGINEER

More Issues 3

- Motion Control continued
  - Mysteries of the Fiducials
  - Glentek Amplifiers
  - Unimplemented Hardware

More Issues 4

- Instrument Change system
  - Automation not implemented
  - Changing design requirements

Summary

- On any given day
  - Some things work
  - Some things don’t
  - Need to attain stable system
- Need to stop shooting at a Moving Target!